

ABSTRACT OF THE DISCLOSURE

[0051] Various single crystals are disclosed including sapphire. The single crystals have desirable geometric properties, including a width not less than about 15 cm and the thickness is not less than about 0.5 cm. The single crystal may also have other features, such as a maximum thickness variation, and as-formed crystals may have a generally symmetrical neck portion, particularly related to the transition from the neck to the main body of the crystal. Methods and for forming such crystals and an apparatus for carrying out the methods are disclosed as well.